

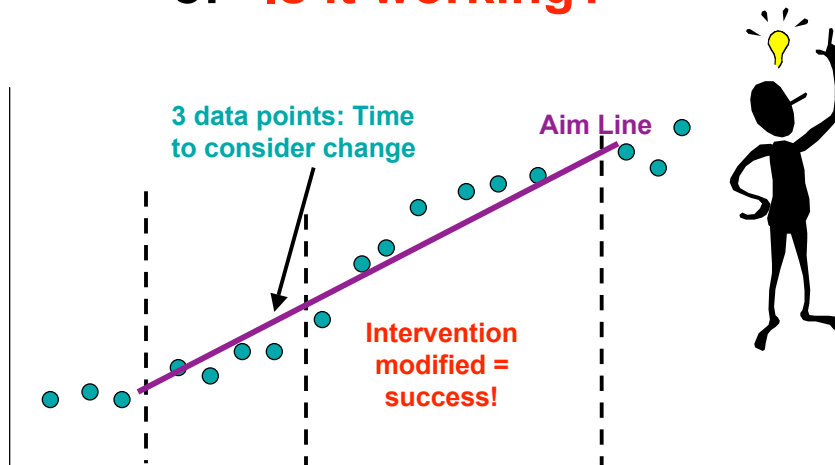
## Progress Monitoring Review and Case Studies

Or.....How do we know if the Intervention is working?  
**AND...**  
How do we use these data to make decisions?

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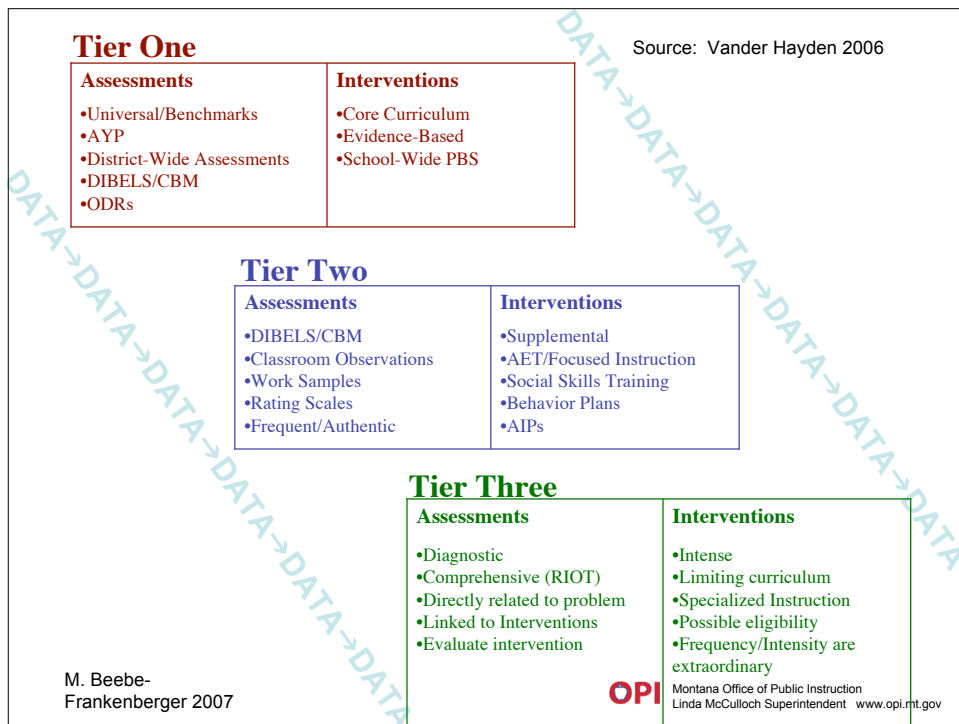
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## Progress Monitoring = Indicators of **“Is it working?”**



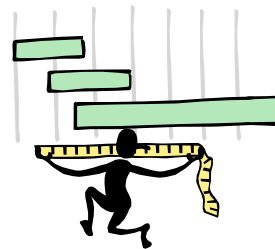
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## DATA Collection

- Systematic and SYSTEMATIZED
  - Scheduled:
    - 3 x year Benchmarking (DIBELS and/or CBMs)
    - Tier 2 at least every 4 weeks, preferably less
    - Tier 3 should be weekly
  - Data base established and maintained in one place
  - Assign responsibility:
    - Data collection
    - Data entry
    - Data reports
    - Data review
  - Review
    - RTI Steering Team
    - All Teachers
    - Parent Reports



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## How to Monitor Student Progress

- Collect data and GRAPH!
  - (See blank graph handout)
- Benefits of using a graph:
  - Creates a learning picture
  - Allows for decision making
  - Helps predict learning
  - Provides documentation
  - Makes data easier to interpret

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## What are Major Graphing Features?

(refer to blank graph form)

- Vertical lines are day lines
- Thick vertical lines are Monday lines
- Horizontal lines (dots) are counting/data lines.
- You must plot the junction of the day and the data on one dot.
- Baseline depicts performance before an intervention
- Aimline tells you the expected rate of learning
- Trendline tells you how the student is currently doing.
- Use a phaseline when you make a change in the intervention of a goal.
- The Y (vertical) axis depicts performance
- The X (horizontal) axis depicts time/categories/nominal data

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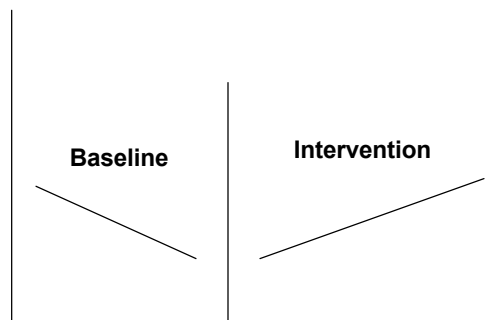
## Other Graphing Conventions?

- Usually connect all data points (unless there is a break of longer than one week)
- Record absences in data boxes (below graph)
- Mark vacations with double vertical lines

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## Graphing the Baseline: Before Intervention



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## Baseline Data Should Be:

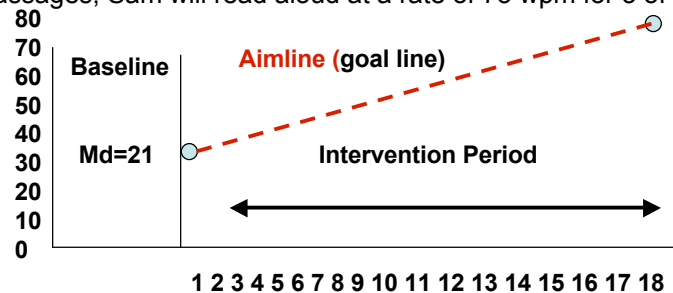
- **Stable**
  - Three measures or more
  - Collected in the appropriate settings
  - Collected in a relatively short period of time
- **Representative**
  - Teacher says is “typical”
  - Accurately describes behavior as it naturally occurs.

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## The “Aimline”

- Shows the expected/predicted rate of learning from your baseline to your goal
- **Goal for Sam:**
- In 18 weeks, when presented with random 2<sup>nd</sup> grade reading passages, Sam will read aloud at a rate of 73 wpm for 3 of 5 trials.



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## Practice: Draw an Aimline

### Don's Goal:

- In 9 weeks, using the bathroom scale as the measuring tool, Don will weight 190 lbs. and maintain this weight until after physical exam.

### Baseline data:

- Don will weigh himself 3 times during a one week period (Mon, Wed, Fri)
- Results: 217, 215, 214

### Summarized baseline data:

- Find median level of weight
- Median = 215 lbs

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## What is a Data Decision Rule?

- A decision rule is the systematic procedure by which patterns of data are analyzed. This data analysis assists in making a decision about the effectiveness of an intervention.

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## Why Decision Rules?

- How do you know when to continue or modify an intervention?
- Do you have unlimited time to continue with interventions that are not working?
- Should we know if interventions are working or not?
- Would you like to know which things work and which things don't work for your students?

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## What Rules Can We Use for Making Decisions?

- **Option I: Moving Median**
  - Decision is made when 3 *consecutive* data points fall above or below the aimline.
- **Option II: Three-Day**
  - Decisions is made after 3 data points (medians)
- **Option III: Split-Middle Trend Analysis**
  - Decision is made after 9 data points which results in a trendline to compare to the aimline.

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## Option I: Moving Median

- **In this option, medians of 3 weeks of data are plotted and the number of data points above or below the aimline are used to determine if the individual is achieving as predicted.**
  - Administer 1 probe each week for 3 weeks and record the raw data below the graph.
  - Each data point will always be the median score.
  - The moving median is a method for graphing the median of our 3 *newest* scores.
  - The moving median is a quick and easy method which reduces variability and eliminates the need for a trendline.

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## How is the Moving Median Graphed?

- 1. draw the aimline
- 2. Enter data/plot 1 median probe per week for 3 weeks and record the raw data below the graph
- Each week, plot the median of your 3 newest scores.
- \*each data point will always be a median score (3-5 measures/median)

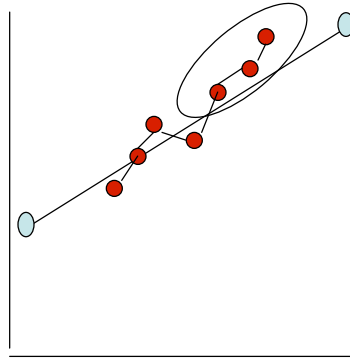
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## Option I: Moving Median

- 3 Decision Rules
- 1. If three (3) consecutive data points are *above* the aimline, raise the criteria

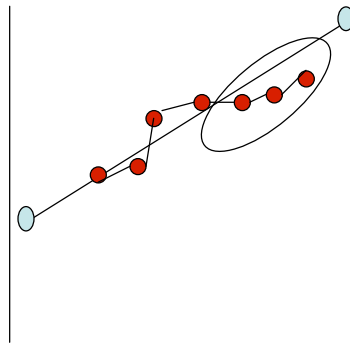


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## Option I: Moving Median

- 3 Decision Rules
- 2. If three (3) consecutive data points are *below* the aimline, change the intervention (dosage, or content)

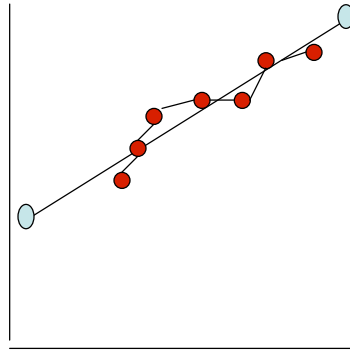


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## Option I: Moving Median

- 3 Decision Rules
- **3.** If neither of the above rules apply, make no change



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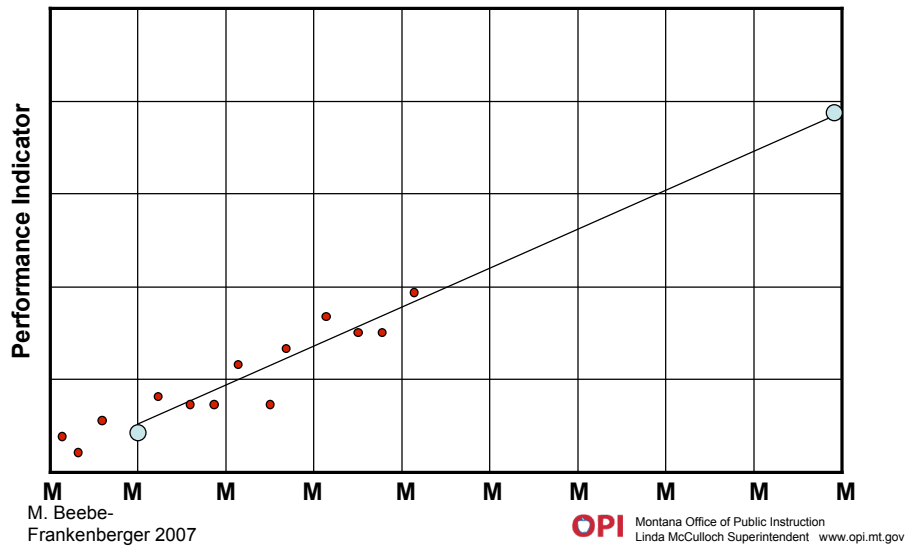
## Option II: Three Day (Medians)

- In this option, after an aimline is drawn, medians are plotted on the graph and 3 data points are used to tell if the individual is achieving as predicted. (5-7 data points are preferred according to Ulman & Shindel)
- Decision rules for “ascending” aimlines:
  - 1. If 3 consecutive data points are above the aimline, raise the criteria.
  - 2. If 3 consecutive data points are below the aimline, change the intervention.
  - 3. If neither of the above rules apply, make no change.

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## Option II: Three Day



## Things to Consider in Decision Making

- Focus on the question: “will the student reach his/her goal by the end of the goal period?”
- Decide to change an intervention whenever the rate of progress falls below the expectation.
- Think of changes in instruction as fine tuning rather than major reconstruction of lessons.
- Use one or two decision making rules.

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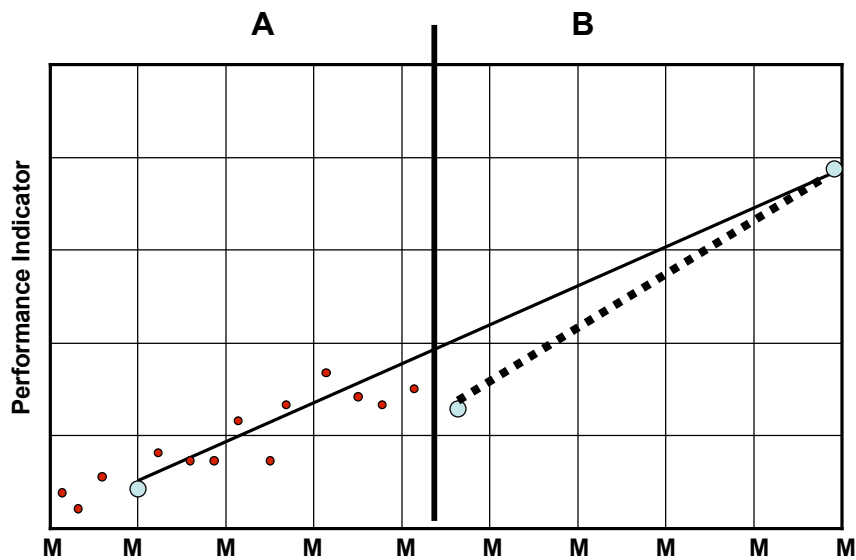
## Changes in Intervention

- 1. Draw a phase line.  
a phase line is drawn vertically on the graph to identify the beginning point where the intervention change occurs.
- 2. Establish a new aimline.
  - Find the median of the last 3-5 data points to establish a new baseline. Connect the new baseline median point to the criterion.

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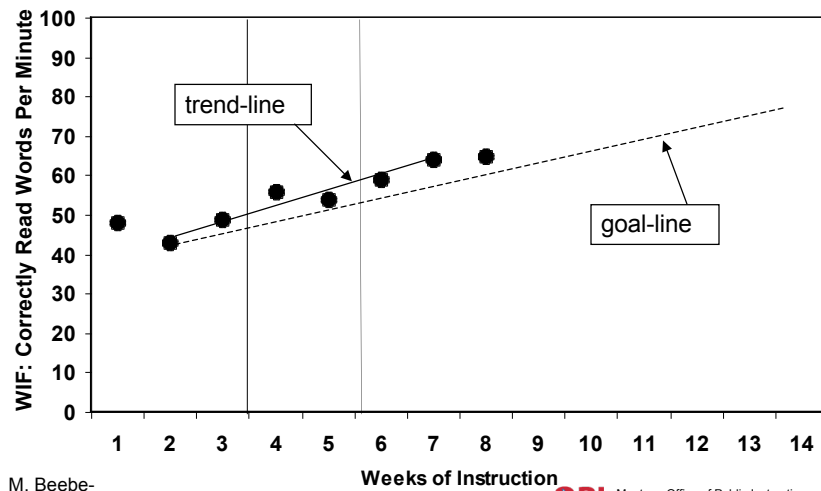
## Drawing a Phase Line



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## Progressing greater than the goal – Increase the goal

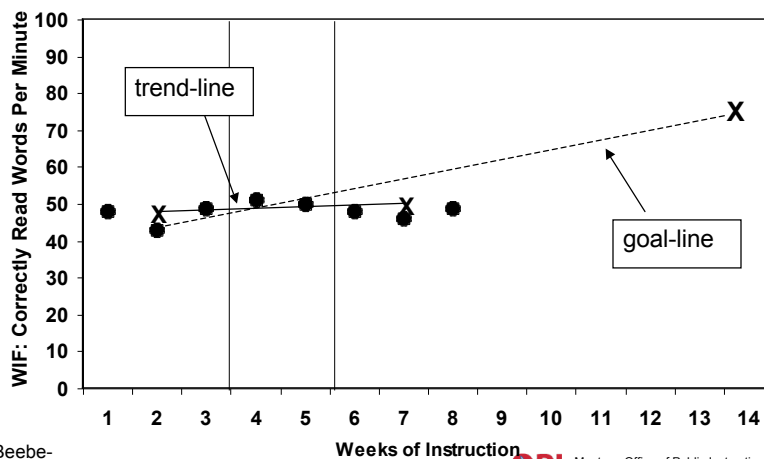


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## Not making Progress – Change instructional program



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## RTI Case Study #1: Josie

- Josie is a 4th grade student at Jefferson Elementary
- Tier 1:
  - DIBELS ORF Screening (benchmark) in fall identified Josie at 48 CWPM = below minimum proficiency of 70 CWPM in fall
  - Decision: RTI process, place in Tier 2 reading group, match skill level to instructional level.

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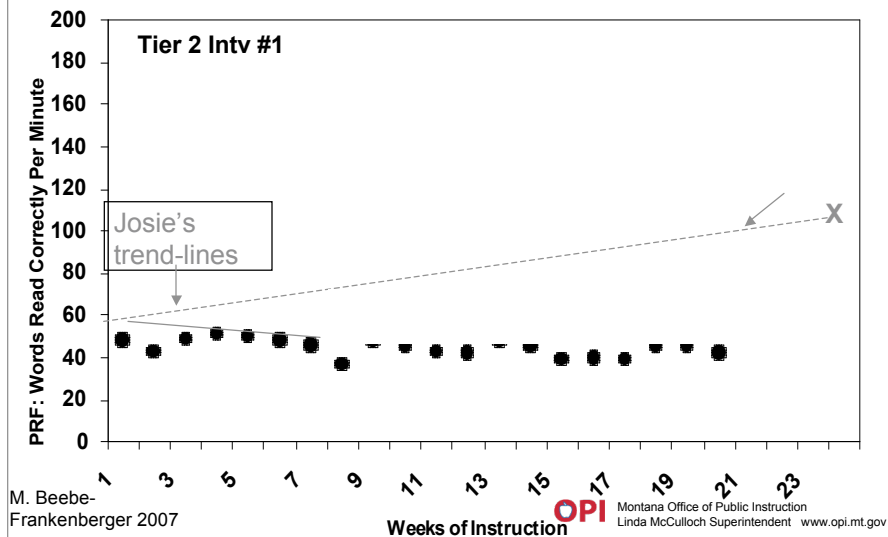
## RTI Case Study #1: Josie

- Tier 2 – Group Reading Intervention:
  - Interventions from Core Program, Houghton Mifflin (evidence-based)
  - Two times per week (Tues/Wed)
  - Fluency checks on Friday
- Goal Calculation:
  - PLOP (3 probes/3 days = establish median)
    - ORF Baseline = 46
  - End of Gr 4 minimum proficiency = 99 CWPM
  - “Problem” =  $99 - 46 = 53$
  - Calculate mean increase per week to get to goal:
    - 53 divided by number of weeks to end of year (26) = 2.0 per wk
- Progress Monitoring:
  - ORF probes (during fluency checks) every Friday

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## RTI Case Study #1: Josie



## RTI Case Study #1: Josie

- Decision after ORF week 8?
- **CHANGE:** Intervention #2 at Tier 2:
  - Increase “dosage” and add group fluency practice
    - Josie receives intervention 4 days per week
    - Josie and group learns group fluency practice
    - Rest of group gets still gets intervention 2X per week.
    - Group does “fluency check” every Thursday
- **Reset Aimline**
  - PLOP 47 CWPM:  $99 - 47 = 52 / 18 \text{ weeks} = 2.9 \text{ per wk}$
- Same Progress Monitoring (ORF every Friday, plus reading checks during fluency practice)

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Teacher: \_\_\_\_\_ Grade: \_\_\_\_\_ Date: \_\_\_\_\_ Source: Vander Hayden, 2006; and Peer Assisted Learning System (PALS)

**STEEP** Reading Classwide Intervention

This intervention is designed to **build reading fluency and increase accuracy**. Requires approximately 15 minutes each day.

**Materials needed**: digital timer, teacher and student reading folders containing reading probes (1 probe for every student), and pencils.

**Teacher Coach Card** (conduct these steps every day):

Tell students, "GET READY for reading partners. Take out a pencil, and story number \_\_, and find your reading partner quickly and quietly."

Tell students, "Write your name on the story, trade stories with your partner and raise your pencil to in the air."

Tell students, "LISTEN as I read this story out loud."

Set timer for 2 minutes and tell students, "First practice. Blue folder partners reads out loud. Green folder partners will LISTEN and SAY any misread, skipped, or stuck word. Begin."

Set timer for 2 minutes and tell students, "Trade jobs. Begin."

When timer rings, tell students, "Now the timed test. Blue folder partners reads out loud. Green folder partners will LISTEN and SAY and CIRCLE any misread, skipped, or stuck word."

Set timer for 1 minute. Say, "On your mark, get set, Go."

When the timer rings, tell students, "Stop. Draw a line on the last word read."

Set timer for 1 minute. Say, "Trade jobs. On your mark, get set, Go."

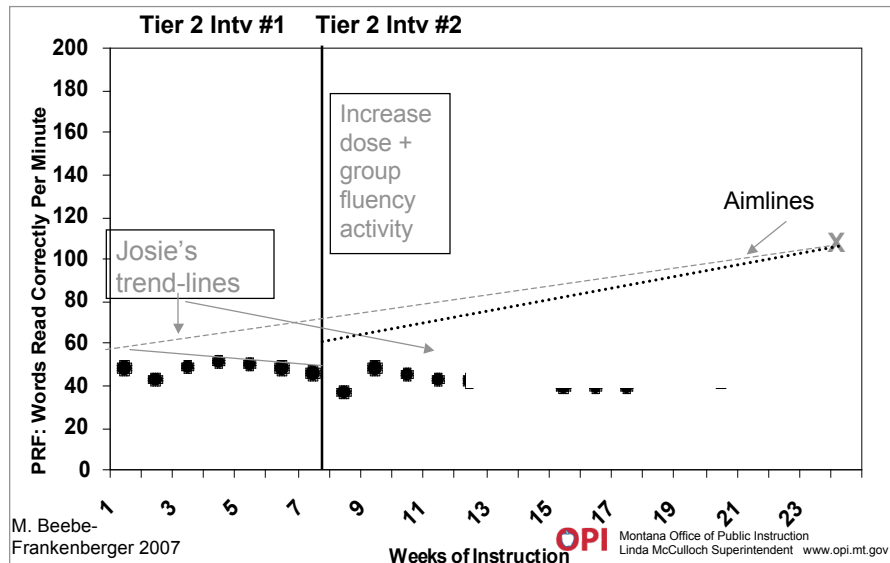
When the timer rings, tell students, "Stop. Draw a line on the last word read."

Tell students "COUNT the number of words that are not circled on your story. Write your score on your CHART. Pass your stories to the front so I can pick them up."

Shuffle the stories. Randomly draw a story from the stack. Write score on the randomly selected story is higher than the randomly selected score from the day before (or

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## RTI Case Study #1: Josie





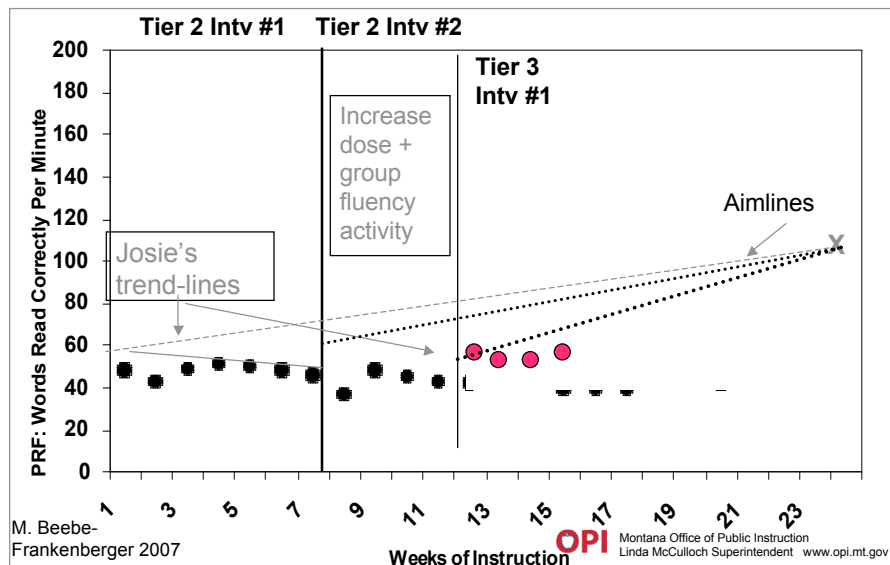
# RTI Case Study #1: Josie

- Decision after ORF week 12?
- **CHANGE: Tier 3, Intervention**
  - Administer specific assessment for skill deficits
  - Results indicate Josie has poor decoding skills; difficulty with segmenting phonemes.
  - Tier 3 Evidence-Based Intervention: SRA Journeys
  - 90 minutes daily with SPED teacher.
- **Reset Aimline**
  - PLOP 47 CWPM:  $99 - 47 = 52 / 18 \text{ weeks} = 2.9 \text{ per wk}$
- Same Progress Monitoring (PSF, NWF, and ORF every Friday)
- **Decision Rule:** If 3 data points below aimline after 4 weeks, consider changing instruction and/or dose

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# RTI Case Study #1: Josie



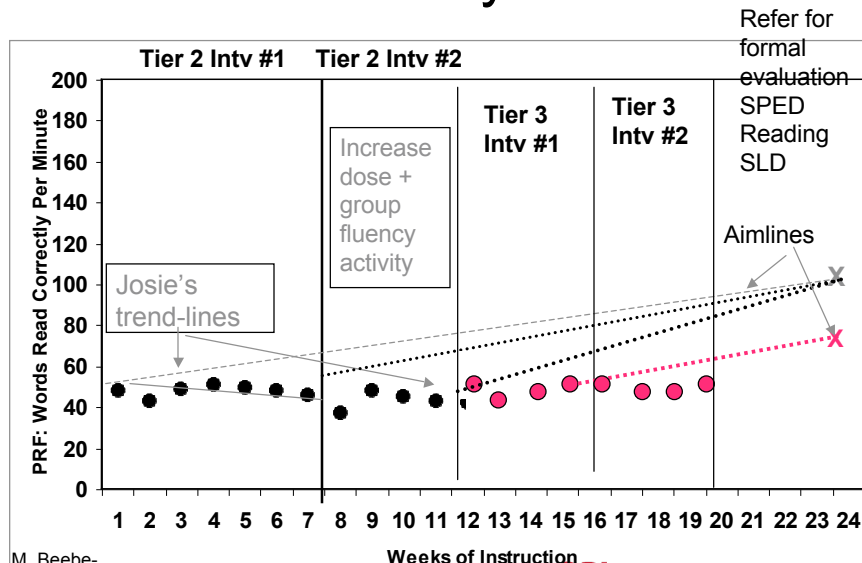
# RTI Case Study #1: Josie

- At week 16, Tier 3, Intervention #1:
  - PSF = increased
  - NWF = increased
  - ORF = no change (47CWPM)
- Decision - change intervention, Tier 3, #2:
  - Change to EdMark curriculum
  - 90 minutes daily with SPED teacher
  - Add 20 minutes daily Sight Word Boosters in small group in peer groups.
- Progress Monitoring – same
- Aimline: Change end of year goal to 10<sup>th</sup> percentile, or 71 CWPM (reduced from 99)
  - Calculate improvement per week =  $71 - 47 = 24 / 10 = 2.4$  per wk
- Decision Rule: If 3 data points below aimline, consider referral for formal evaluation SLD Reading eligibility SPED services.

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# RTI Case Study #1: Josie



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## RTI Case Study #1: Josie

- At week 20:
  - PSF = increased
  - NWF = increased
  - ORF = slight change (49 CWPM)
- Decision – Refer for Formal Evaluation SPED Services as SLD, Reading:
  - Continue EdMark curriculum during evaluation
  - 90 minutes daily with SPED teacher
  - Add 20 minutes daily Sight Word Boosters in small group in peer groups.
- Progress Monitoring – same

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## RTI Case Study #1: Josie

- Formal Evaluation for eligibility SPED services as SLD Reading
  - RTI – documented poor responses to evidence-based reading interventions (Tier 2, 1&2; Tier 3, 1&2) = evidence of SLD
  - Additional evaluation based upon RTI Team decision: what will inform SPED instruction to support Josie's learning? (e.g instructional level; appropriate curriculum Reading Mastery?), environmental supports; RIOT/ICEL)
- Once parent signs consent and assessment schedule, 60 day rule applies
  - HOWEVER.....in the RTI process, it is expected this time period will be greatly reduced BECAUSE .....you've documented the process along the way!

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## RTI Case Study #2: Joshua

- Joshua is a 4th grade student at Jefferson Elementary
- Tier 1:
  - DIBELS ORF Screening (benchmark) in fall identified Josie at 45 CWPM = below minimum proficiency of 70 CWPM in fall
  - Decision: RTI process, place in Tier 2 reading group, match skill level to instructional level.

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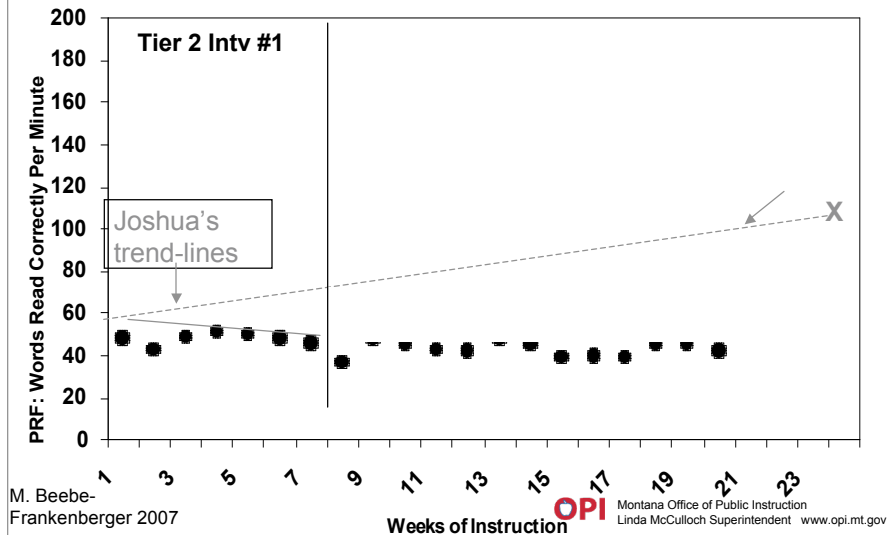
## RTI Case Study #2: Joshua

- Tier 2 – Group Reading Intervention:
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  - Two times per week (Tues/Wed)
  - Fluency checks on Friday
- Goal Calculation:
  - PLOP (3 probes/3 days = establish median)
    - ORF Baseline = 45
  - End of Gr 4 minimum proficiency = 99 CWPM
  - “Problem” =  $99 - 45 = 54$
  - Calculate mean increase per week to get to goal:
    - 54 divided by number of weeks to end of year (26) = 2.1 per wk
- Progress Monitoring:
  - ORF probes (during fluency checks) every Friday

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## RTI Case Study #2: Joshua



## RTI Case Study #2: Joshua

- Decision after ORF week 8?
- **CHANGE:** Intervention #2 at Tier 2:
  - Increase “dosage” and add group fluency practice
    - Joshua receives intervention 4 days per week
    - Joshua and group learns group fluency practice
    - Rest of group gets still gets intervention 2X per week.
    - Group does “fluency check” every Thursday
- **Reset Aimline**
  - PLOP 47 CWPM:  $99 - 47 = 52 / 18 \text{ weeks} = 2.9 \text{ per wk}$
- Same Progress Monitoring (ORF every Friday, plus reading checks during fluency practice)

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Teacher: \_\_\_\_\_ Grade: \_\_\_\_\_ Date: \_\_\_\_\_ Source: Vander Hayden, 2006; and Peer Assisted Learning System (PALS)

**STEEP** Reading Classwide Intervention

This intervention is designed to **build reading fluency and increase accuracy**. Requires approximately 15 minutes each day.

**Materials needed**: digital timer, teacher and student reading folders containing reading probes (1 probe for every student), and pencils.

**Teacher Coach Card** (conduct these steps every day):

Tell students, "GET READY for reading partners. Take out a pencil, and story number \_\_, and find your reading partner quickly and quietly."

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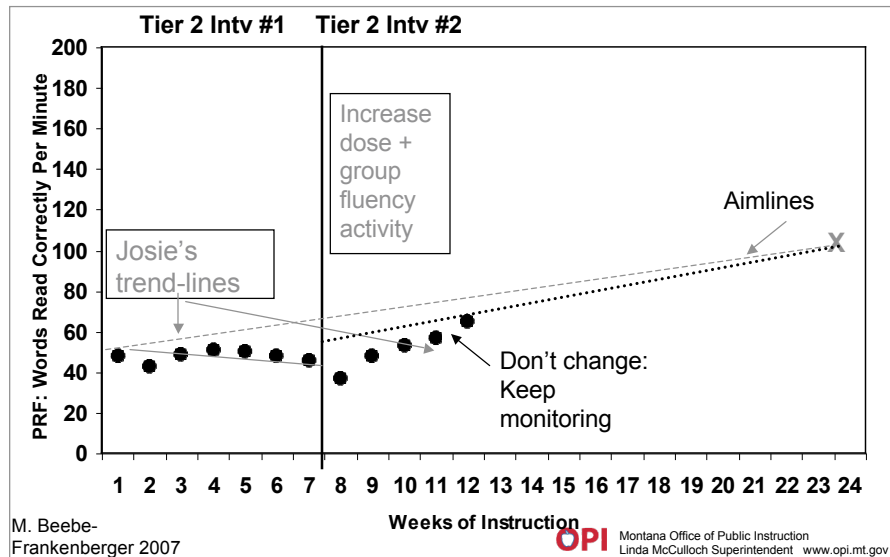
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## RTI Case Study #2: Joshua



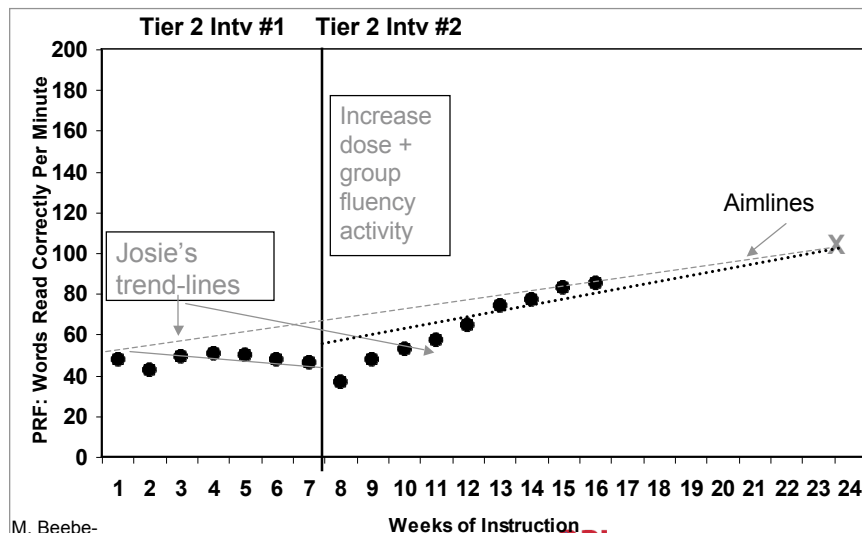
## RTI Case Study #2: Joshua

- Decision after ORF week 11?
  - WAIT: Keep monitoring – slope towards aimline
  - Continued as before: Joshua receives intervention 4 days per week
    - Joshua and group learns group fluency practice
    - Rest of group gets still gets intervention 2X per week.
    - Group does “fluency check” every Thursday
- Do NOT reset Aimline
- Same Progress Monitoring (ORF every Friday, plus reading checks during fluency practice)

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## RTI Case Study #2: Joshua



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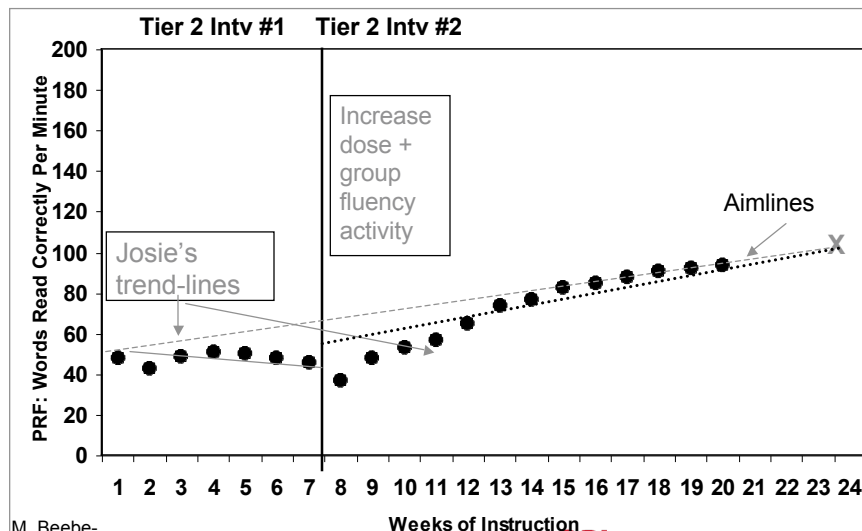
## RTI Case Study #2: Joshua

- Decision after ORF week 16?
  - On Track to end of year goal.
  - Reduce intervention to 2 days per week
  - Progress monitor
- Do NOT reset Aimline
- Same Progress Monitoring (ORF every Friday, plus reading checks during fluency practice)
- Decision Rule: If after week 20, progress is maintaining and continues good RTI, EXIT from intervention!

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## RTI Case Study #2: Joshua



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## RTI Case Study #2: Joshua

- Decision after ORF week 20?
- EXIT from intervention!

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## Sticking to the Plan: Treatment Integrity



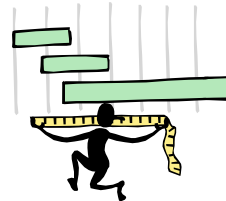
- Definition: The degree to which intervention procedures are implemented as intended
- Failure to implement with integrity threatens internal and external validity of treatment
- Treatment integrity is often assumed, rather than assessed
- Outcomes cannot be attributed to the intervention unless one measures the extent to which the intervention plan was implemented

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## Strategies to Measure Treatment Integrity

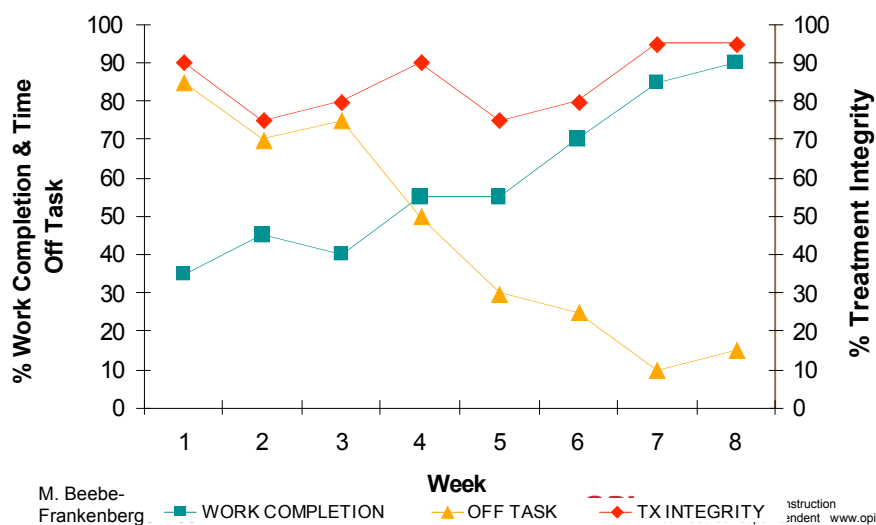
- A number of strategies that range from direct to indirect approaches:
  - direct observation procedures
  - behavior rating scales
  - self-reporting strategies (checklists)
  - permanent products
  - manualized treatments
- Best practice to use:
  - 2 or more methods (e.g. checklist and external observer periodically)
  - Least intrusive



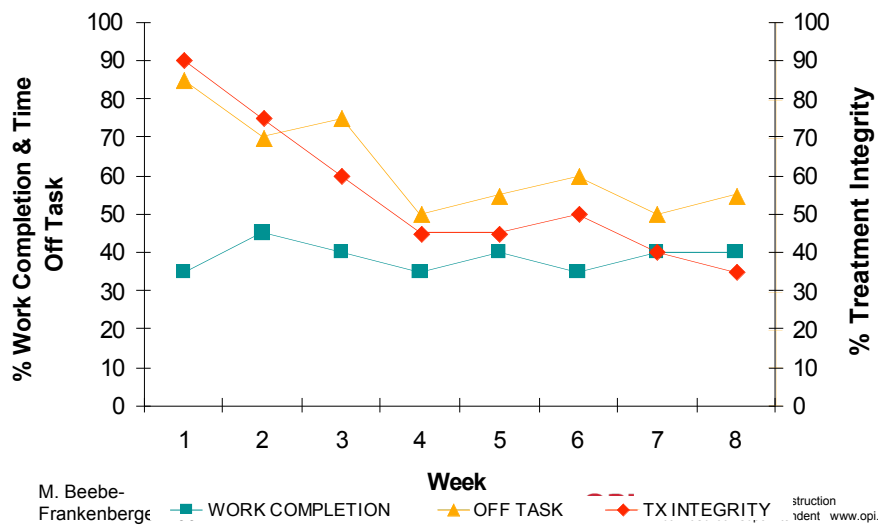
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### Progress and Treatment Integrity: Example of Good Treatment Integrity



## Progress and Treatment Integrity: Example of Poor Treatment Integrity



## Using CBM to Develop IEPs

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## CBM and IEPs

- Improve special education accountability and effectiveness
- Eliminate focus on IEP short-term objectives

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## Mastery Measurement IEPs

- Mastery of a series of short-term objectives
  - IEPs with short-term objectives
- Tests change as mastery is demonstrated
- Technical problems for quantifying progress
  - Objectives are not equal intervals
  - Cannot index maintenance
  - No reliability/validity
  - Unmanageable IEPs

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# Mastery Measurement IEP

- Current Performance Level
  - Student performs at grade 3 on computational math.
- Goal
  - By year's end, student will increase performance by one grade level.
- Objectives
  - By 10/1, student will master additional with regrouping.
  - By 11/1, student will master multiplication facts.
  - By 12/1, student will mastery multiplying 2-digit numbers, no regrouping.

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# CBM

- Monitor performance on year-end goal
  - IEPs with long-term goal
- Each weekly test: Equivalent difficulty, assessing performance on year-end goal
- Technical advantages for quantifying progress:
  - Scores are equal interval units (slopes)
  - Automatically indexes maintenance
  - Strong reliability/validity
  - Manageable IEPs
  - Living Document (ambitious goals and stronger learning)

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## CBM IEP

- **Current Performance Level**
  - Given 25 problems representing grade 4 curriculum, student writes 20 correct digits in 3 minutes.
- **Goal**
  - In 30 weeks, given 25 problems representing grade 4 curriculum, student will write 55 digits correct in 3 minutes.
- **Objectives**
  - Each week, given 25 problems representing grade 4 curriculum, student will write 1 additional correct digits in 3 minutes.

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## CBM IEP

- **Current Performance Level**
  - Given passages representing grade 3 material, students reads 27 words correct in 1 minute.
- **Goal**
  - Given passages representing grade 3 material, students will read 72 words correct in 1 minute
- **Objective**
  - Each week, given passages representing grade 3 material, students will read 1.5 additional words correct in 1 minute.

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